REMARKS

Claims 1, 2, 4 and 5 have been amended in order to more particularly point out, and distinctly claim the subject matter to which the applicants regard as their invention. It is believed that this Amendment is fully responsive to the Office Action dated March 7, 2003.

Claims 1 - 6 are rejected under 35 USC §112, first paragraph, for the reasons set forth in item 1, pages 2 and 3 of the Action. The applicants respectfully request reconsideration of this rejection.

In the amendment to claim 1, in the response to the previous Office Action, an attempt was made to distinguish between the absorption of axial force fluctuations due to the "inherent properties" referred to by the Examiner in paragraph 5 of the Office Action dated September 3, 2002, and the absorption of axial force fluctuations due to the present invention. However, in the present rejection under 35 USC §112, first paragraph, the Examiner alleges that the wording of amended claim 1 suggests that the present invention includes another force fluctuation absorption means, such as an embedded spring or some other structure.

In view of the Examiner's position of the Examiner, the applicants have amended claim 1 to overcome this rejection. Accordingly, the withdrawal of the outstanding 35 USC §112, first paragraph, rejection is in order, and is therefore respectfully solicited.

As to the merits of this case, claims 1 and 2 are rejected under 35 USC §102(b) as being anticipated by Maurer et al. (U.S. Patent No. 4,360,982). The applicants respectfully request reconsideration of this rejection.

The Examiner has taken the position that Maurer et al. discloses a bucket tooth (60) attached to a bucket lip (36) via a fastening bolt (65), and that the bucket tooth has a concave aperture (80) for receiving the fastening bolt. The bucket tooth is made of a boron steel and the combination of the concave aperture and the steel construction absorbs axial force fluctuations, due to the inherent properties of steel. The Examiner again recites that it is notoriously well known that steel, and other metals, deform first elastically and then plastically in response to a force. When the bolt acts upon the bucket tooth, the bucket tooth, particularly at the concave aperture, also deforms elastically. This elastic deformation absorbs the axial force. Deformation in the elastic region also inherently means that the bucket tooth generates a resilient return force and that warpage and the resulting direction of concavity only depends on the direction the force is being applied.

The feature of the bucket of Maurer is a removable cutting plate (36). Each tooth (66) of the bucket is depicted as having a planar face whereat it is attached to the cutting plate (36), which also has a planar face. The deformation of the tooth in the elastic region, referred to by the Examiner, is due solely to a compressive force caused by the bolts (65) which are elastically stretched between the nut and the bolt head when nuts (68) are tightened. The tooth is most likely elastically slightly reduced in thickness, however once the bolt is caused to lengthen a small amount, by creep within

the bolt, for example, no elastic force remains to absorb continued axial force fluctuation.

In the amendment to claim 1, an axial force fluctuation absorbing means is defined wherein such axial force fluctuation absorbing means acts to cause or increase a gap between a portion of one face side of the bucket tooth and the bucket lip, by action of resilient forces found in the material from which the bucket tooth is fabricated. Such means is not found in the bucket of Maurer et al. because as soon as a bolt (65) of Maurer et al. would lengthen to a condition whereat a gap between a face of a tooth and the bucket lip would occur, there would be no means present for continuing to absorb fluctuations in axial force.

In view of the above, the applicants respectfully submit that not all of the claimed elements, as now set forth in independent claim 1 and claim 2 which depends on claim 1, are found in exactly the same situation and united in the same way to perform the identical function in the Maurer et al. apparatus Thus, there can be no anticipation of the applicants' claimed invention under 35 USC §102(b) based on the teachings of Maurer et al.

Accordingly, the withdrawal of the outstanding anticipation rejection under 35 USC §102(b) based on Maurer et al. (U.S. Patent No. 4,360,982) is in order, and is therefore respectfully solicited.

As to the outstanding obviousness rejections under 35 USC §103(a), first, claim 3 is rejected under 35 USC §103(a) as being unpatentable over Maurer et al. (U.S. Patent No. 4,360,982). The applicants respectfully request reconsideration of this rejection.

The Examiner alleges that Maurer et al. discloses the claimed invention, as stated in the paragraph in relation to the rejection under 35 USC §102, except for the amount of warp, and recites that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a warp of between 2 mm/m to 15 mm/m, since the warp is dependent upon the force applied.

It is the applicants' position that Maurer et al. does not disclose a warp of any dimension in any of the tooth embodiments disclosed, and that the applicants' above remarks in relation to the above rejection under 35 USC §102 are similarly applicable.

Accordingly, the withdrawal of the outstanding obviousness rejection under 35 USC §103(a) based on Maurer et al. (U.S. Patent No. 4,360,982) is in order, and is therefore respectfully solicited.

Secondly, claims 4 - 6 are rejected under 35 USC §103(a) as being unpatentable over Maurer et al. (U.S. Patent No. 4,360,982) in view of Rose et al. (U.S. Patent 4,958,970). The applicants respectfully request reconsideration of this rejection.

The Examiner alleges that Maurer et al. discloses the claimed invention, as stated in the paragraph in regard to the rejection under 35 USC §102, except for the bucket tooth being spot faced on the side facing the bucket lip, and that the secondary reference of Rose et al. teaches that it was known in the art at the time the invention was made to spot face (Fig. 8 – countersink) an element on the side facing the surface to which it is to be bolted. The Examiner recites that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the bucket tooth of Maurer with the spot facing of Rose, in order to provide an improved connection and force absorption means.

Regarding Claim 6, the Examiner alleges that the range of the ratio of depth of the spot facing to the diameter would have been an obvious matter of design choice since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Rose describes a graduated-load spring washer for fasteners which are disposed between a component being fastened and a head of the fastener. The spring washer is a separate device from the component being fastened and the axial fore fluctuation absorbing means is not a part of the tooth itself, as defined in the present claimed invention.

The "spot face" of Fig. 8 of Rose et al. referred to by the Examiner is solely a deburring countersink to eliminate "burrs and local distortion due to drilling, countersinking, or punching" as

shown in Fig. 8 of Rose et al. In Fig. 8, the alleged "spot face" is labeled, as a "deburring countersink". A "spot face" of the type shown in Fig. 8 of Rose et al. would not function as an axial force fluctuation absorbing means to cause or increase a gap between a portion of one face side of a tooth and a bucket lip by action of resilient forces found in the material from which the bucket tooth is fabricated, as now defined in claims 4 - 6.

Accordingly, even if, *arguendo*, the teachings of Maurer et al. and Rose et al. can be combined in the manner suggested by the Examiner, such combined teachings would still fall far short in fully meeting the applicants' claimed invention. Thus, a person of ordinary skill in the art would not have found the applicants' claimed invention, as now set forth in the amended claims filed herewith, obvious under 35 USC §103(a) based on Maurer et al. and Rose et al., singly or in combination. Thus, the withdrawal of the outstanding obviousness rejection under 35 USC §103(a) based on Maurer et al. (U.S. Patent No. 4,360,982) in view of Rose et al. (U.S. Patent 4,958,970) is in order, and is therefore respectfully solicited.

In view of the aforementioned amendments and accompanying remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

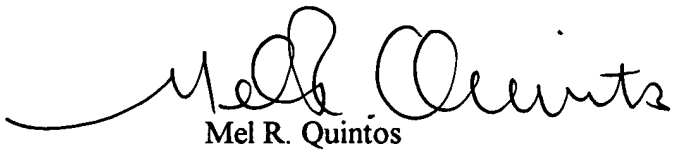
U.S. Patent Application Serial No. **09/725,314**

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**Version with markings to show changes made**."

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, WESTERMAN & HATTORI, LLP



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PATENT TRADEMARK OFFICE

Enclosures: Version with markings to show changes made

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VERSION WITH MARKINGS TO SHOW CHANGES MADE 09/725,314

IN THE CLAIMS:

Amend claims 1, 2, 4 and 5 as follows:

1. (Thrice Amended) In an assembly having a bucket tooth attached to a bucket lip via a fastening bolt, said bucket tooth comprising axial force fluctuation absorbing means for absorbing fluctuations in axial force of said fastening bolt after attaching one face side of said bucket tooth to face said bucket lip, said axial force fluctuation absorbing means [being in addition to inherent elastic properties]acting to cause or increase a gap between said one face side and said bucket lip, about the point of attachment, by action of a resilient return force found in the material from which said bucket tooth is fabricated.

2. (Twice Amended) The bucket tooth according to claim 1, wherein said axial force fluctuation absorbing means provides [a]said resilient return force during said fluctuations in axial force by causing a warp to occur by resilient deformation of said tooth so that said one face side, bolted in a state where [the] said one face side is positioned on the bucket lip side, becomes a concave face during action of said axial force fluctuation absorbing means.

4. (Twice Amended) The bucket tooth according to claim 1, wherein said axial force fluctuation absorbing means provides [a] said resilient return force by spot facing a circumferential portion of a bolt hole, in which said fastening bolt is inserted, on [the] said one face side facing

said bucket lip.

5. (Twice Amended) The bucket tooth according to claim 1, wherein said axial force fluctuation absorbing means provides [a] said resilient return force during said fluctuations in axial force

by causing a warp to occur by resilient deformation of said tooth so that said one face side, bolted in a state where [the] said one face side is positioned on the bucket lip side, becomes a concave face, and

by spot-facing of a circumferential portion of a bolt hole, in which the fastening bolt is inserted, on said one face side facing said bucket lip.